



July 13, 2011

Ms. Therese Brekke
Lennar Homes of California
One California Street, Suite 2700
San Francisco, CA 94111

Re: *Transportation Impact Analysis for the Proposed Port Priority Amendment to the San Francisco Bay Plan*

Dear Therese:

Fehr & Peers has prepared the following memorandum to summarize the traffic impacts associated with the proposed amendment to the San Francisco Bay Plan (Bay Plan). The proposed amendment to the Bay Plan ("Project") modifies the Bay Plan Port Priority Use Area designation in Hunters Point Shipyard in San Francisco, CA. The Project would lift the Port Priority designation from 73.4 acres. The lands would be used for development planned as part of the larger Candlestick Point-Hunters Point Shipyard Phase II Redevelopment Project ("CP-HPS Project"). The CP-HPS Project proposed that the lands would be used for public park lands and parking for the proposed stadium at Hunters Point Shipyard; however, two variants to the project would allow portions of the land to be developed for either housing or research and development space ("R&D") (See **Insets 1, 2, and 3**).

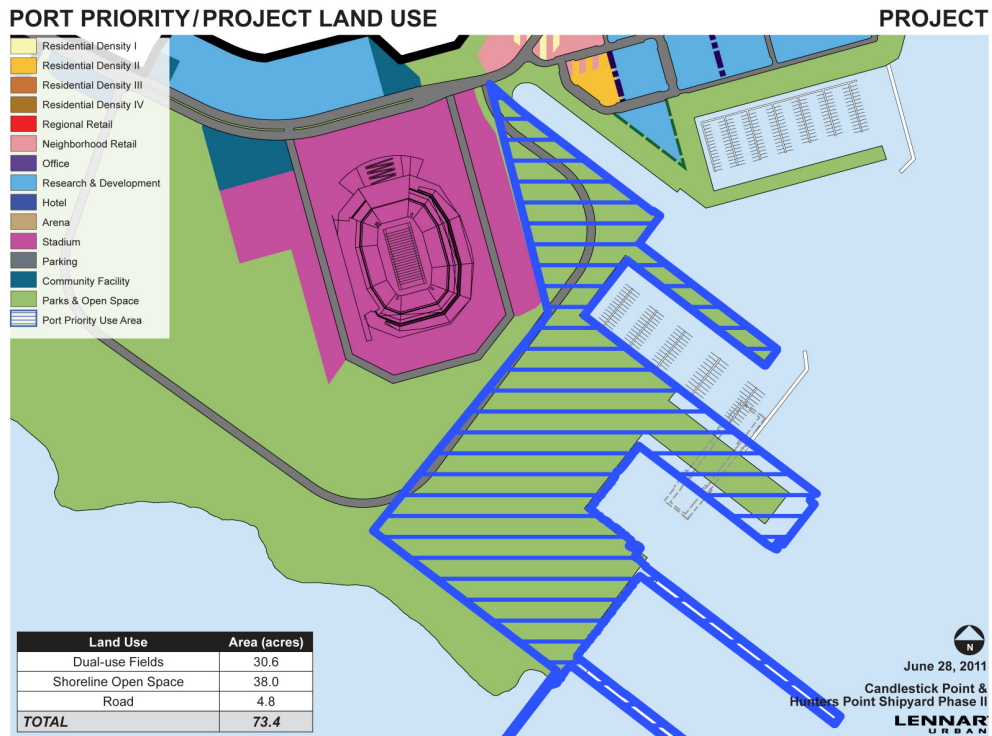
The CP-HPS Project was previously analyzed within an Environmental Impact Report ("EIR") prepared pursuant to the California Environmental Quality Act ("CEQA"). The CP-HPS EIR was certified by the San Francisco Redevelopment Agency ("SFRA") and the San Francisco Planning Commission on June 3, 2010. The San Francisco Board of Supervisors affirmed the Planning Commission's certification on July 13, 2010 and approved all entitlements related to the project on August 3, 2010.

The transportation impact analysis is based on travel demand forecasts and cumulative analysis prepared for the CP-HPS EIR. This letter report describes the Project-related travel demand forecasts with and without the Project, resulting traffic intersection delay and Level of Service ("LOS") at nearby intersections, and the methodology and criteria used to determine significant impacts resulting from the Project. The final section of this letter report describes potential issues, discussed by travel mode, associated with access to the proposed park land and housing units or research and development buildings.

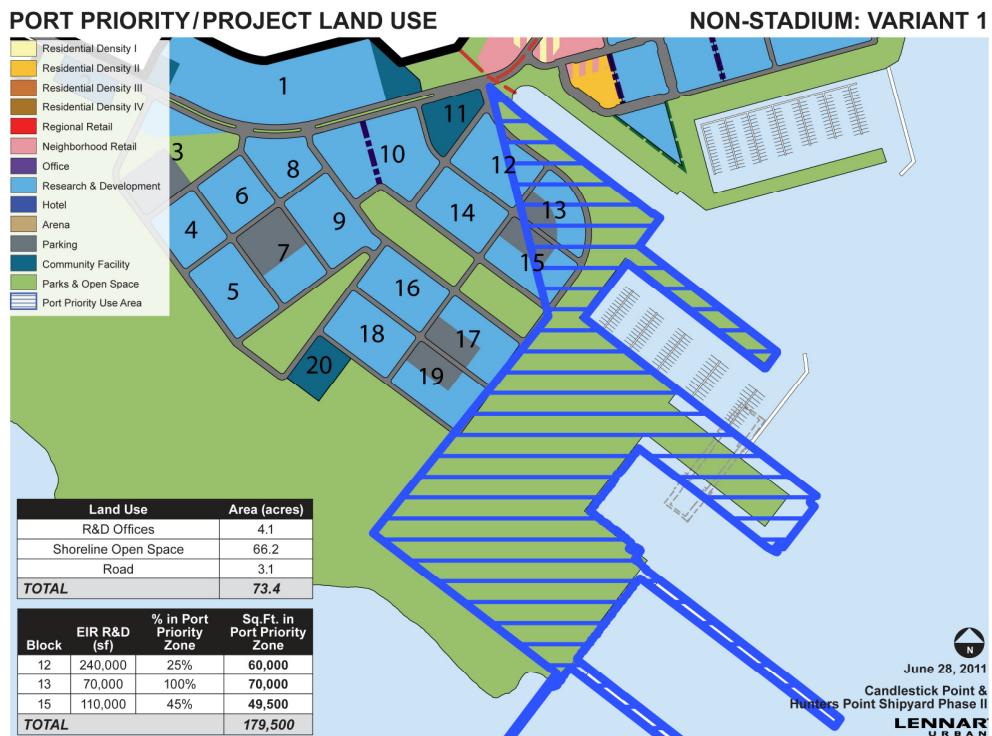
PROJECT DESCRIPTION

Under the CP-HPS Project, the approximately 73.4 acres of Port Priority land is proposed to be a part of the Hunters Point open space, including 30.6 acres of dual-use (sports/parking) sports fields; however, two variants to the CP-HPS Project would allow 179,500 square feet of R&D on 4.1 acres (Variant 1) or up to 176 housing units, including townhomes, low-rise flats and high-rise flats, on 3.9 acres (Variant 2A) (Lennar Urban, 2011). If housing units are constructed, they would include affordable, moderate income, and market-rate type units as classified by the SFRA. The Project is located fully or partially within the following Hunters Point Blocks: 15b, 16b, 17a, 17b, 18a, and 18b.

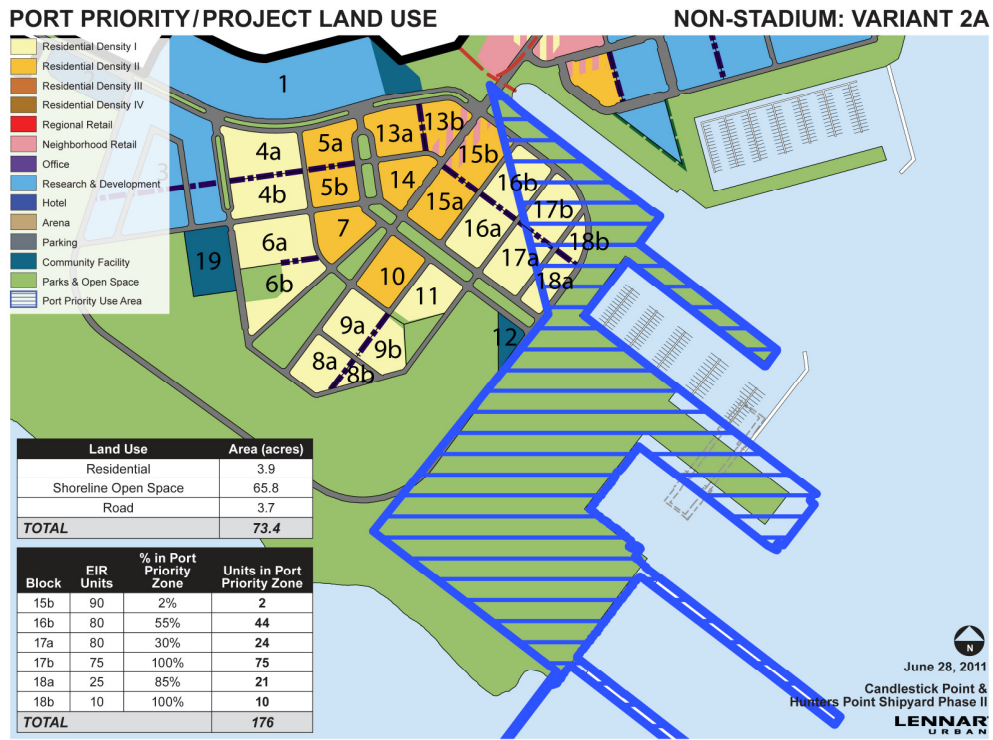
Inset 1. Proposed Project



Inset 2. Variant 1 – Research and Development Non-Stadium Variant



Inset 3. Variant 2A – Housing Non-Stadium Variant



STUDY INTERSECTIONS

Study intersections were selected based on their proximity to the Project site. The following intersections (as shown on **Inset 4**) were analyzed for potential AM and PM peak-hour impacts:

1. Griffith/Palou-Crisp
2. Donahue/Innes

Both of these study intersections are gateway intersections leading to the Hunters Point Shipyard Redevelopment area.



TRAVEL DEMAND FORECASTS

Travel demand forecasts for the Project were developed using trip generation rates developed for the CP-HPS EIR. These rates reflect an urban design pattern, along with Transportation Demand Management ("TDM") programs and additional transit service that encourages walking and biking for shorter neighborhood trips and transit use to and from citywide and regional destinations. The average vehicular trip generation rates per dwelling unit (regardless of style or income diversity), and park land trip generation rates are shown on **Table 1**. Based on these trip rates, the Project would generate 4 new AM peak hour vehicle trips and 4 new PM peak hour vehicle trips. Variant 1 (Research and Development) would generate 97 new AM peak hour trips and 86 new PM peak hour trips. Variant 2A (Housing) would generate 47 new AM peak hour trips and 53 new PM peak hour trips.

TABLE 1: PROJECT VEHICLE TRIP GENERATION							
Land Use	Size	Trip Generation Rates ^{1,2}			Trip Generation		
		Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour	PM Peak Hour
Project – Dual-Use Sports Fields and Multi-Use Lawns							
Parks and Open Space	68.6 ³ acres	1.27	0.04	0.04	87	4	4
Non-Stadium Variant 1 – Research & Development							
Research & Development	179.5 ksf	3.70	0.52	0.46	665	94	83
Parks and Open Space	66.2 acres	1.27	0.04	0.04	84	3	3
Total	--	--	--	--	749	97	86
Non-Stadium Variant 2A – Housing							
Housing	176 units	3.14	0.25	0.28	553	44	50
Parks and Open Space	65.8 acres	1.27	0.04	0.04	84	3	3
Total	--	--	--	--	637	47	53
Notes:							
1. Vehicle trip generation rates derived from the effective trips rates identified in the CP/HPS Study, and assume build out of the overall CP/HPS Project and associated transportation improvements.							
2. Trip generation rates presented as trips per unit.							
3. Acreage planned for roads are not included in trip generation calculations.							
Source: Fehr & Peers, 2011.							

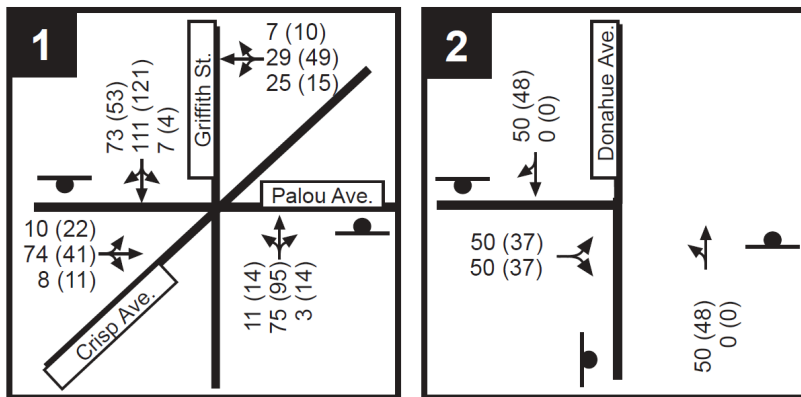
This analysis considers only weekday peak hour conditions. The Project scenario includes a new stadium near the project site; however, weekday games would occur infrequently, such as during the preseason or during one Monday night during the regular football season. The CP-HPS EIR provides a more detailed analysis of the project study area during post-game conditions on a weekend.

PROJECT TRAFFIC IMPACT ANALYSIS

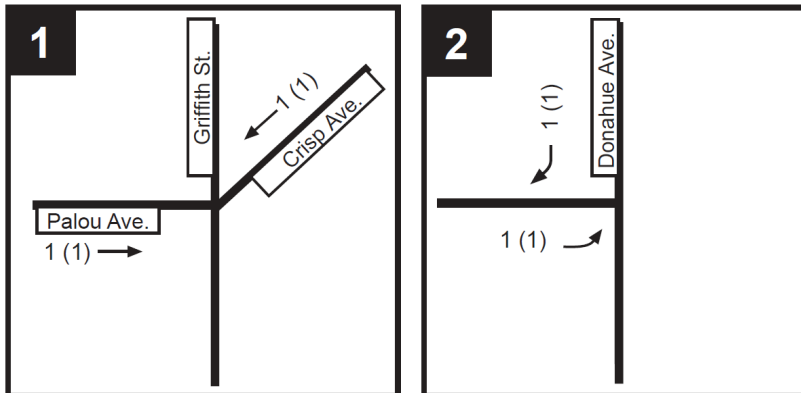
Project traffic conditions were analyzed using existing traffic data for the area documented in the CP-HPS EIR. It should be noted that the Project is located in an area that is currently a part of the decommissioned Hunters Point Shipyard, and the street network identified in the CP-HPS Plan does not currently exist as planned. Street improvements in the area near the Project will be constructed in conjunction with phases of the CP-HPS Plan development build-out.

Inset 5 shows the existing intersection volumes and configurations. The traffic model developed for the CP-HPS EIR was used to assign the AM and PM peak hour trips to the Study Intersections (**Inset 6**) to develop Existing Plus Project intersection turning movement volumes (**Inset 7**). **Table 2** presents a comparison of the intersection LOS analysis for Existing and Existing Plus Project Conditions for the weekday AM and PM peak hours.

Inset 5.
 Existing Weekday Peak Hour Volumes



Inset 6.
 Proposed Project Trip Assignment



Inset 7.

Existing Plus Project

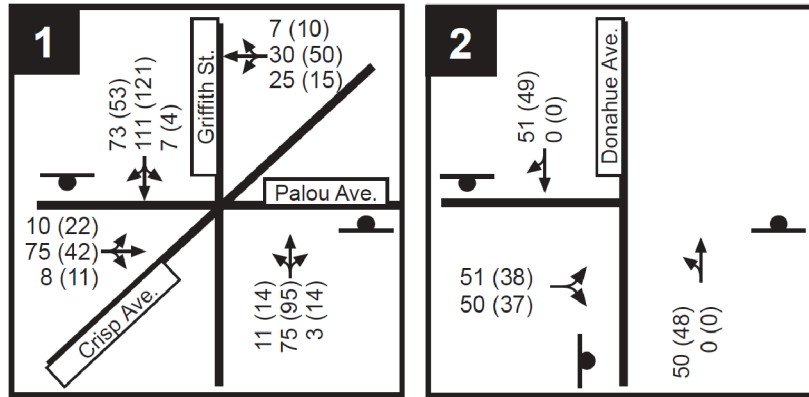


TABLE 2: INTERSECTION LEVEL OF SERVICE – PROJECT CONDITIONS (PROJECT)							
Intersection	Control	Peak Hour	Existing		Existing Plus Project		Project Impact
			Delay ¹	LOS ²	Delay ¹	LOS ²	(Yes/No)
1. Griffith / Palou – Crisp	Signal	AM	11.4	B	11.5	B	No
		PM	11.6	B	11.6	B	No
2. Donahue / Innes	All-Way Stop	AM	7.3	A	7.3	A	No
		PM	7.2	A	7.2	A	No
Notes: 1. Delay measured in seconds per vehicle. 2. Level of Service Source: Fehr & Peers, 2011.							

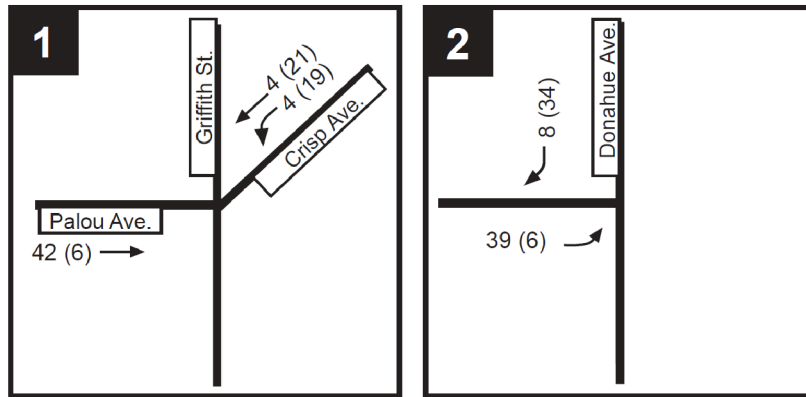
The threshold for a significant traffic impact, established by the San Francisco Planning Department, is deterioration in the LOS at a signalized intersection from LOS D or better to LOS E or LOS F, or from LOS E to LOS F.

The addition of Project-generated vehicle trips to the study area roadway network would cause delay to increase slightly; however, the study intersections would continue to operate at LOS B or better. Therefore, the Project would have a **less-than-significant** impact to the study intersections.

The Project variants were also analyzed under Existing Plus Variant 2A and Existing Plus Variant 1 conditions. **Insets 8** through **11** summarize the project trip assignment for each variant and existing plus variant conditions. **Table 3** and **Table 4** presents a comparison of the intersection LOS analysis for Existing and Existing Plus Variant 2A and Existing Plus Variant 1 Conditions for the weekday AM and PM peak hours.

Inset 8.

Variant 1 Project Trip Assignment



Inset 9.

Existing Plus Variant 1

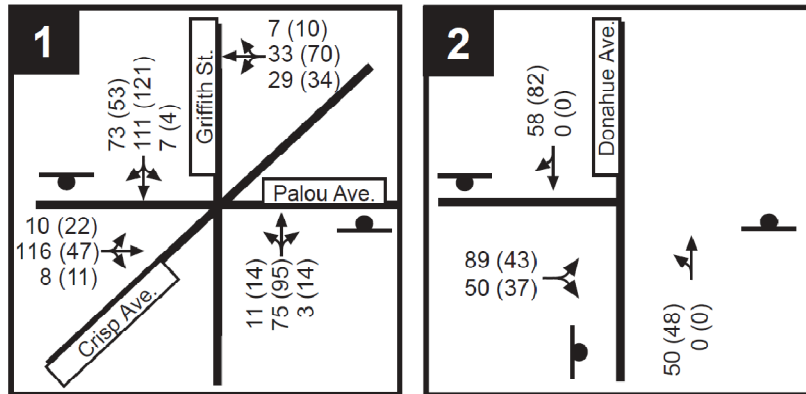


TABLE 3: INTERSECTION LEVEL OF SERVICE – PROJECT CONDITIONS (VARIANT 1)

Intersection	Control	Peak Hour	Existing		Existing Plus Variant 1		Project Impact
			Delay ¹	LOS ²	Delay ¹	LOS ²	(Yes/No)
1. Griffith / Palou – Crisp	Signal	AM	11.4	B	12.1	B	No
		PM	11.6	B	12.5	B	No
2. Donahue / Innes	All-Way Stop	AM	7.3	A	7.5	A	No
		PM	7.2	A	7.2	A	No

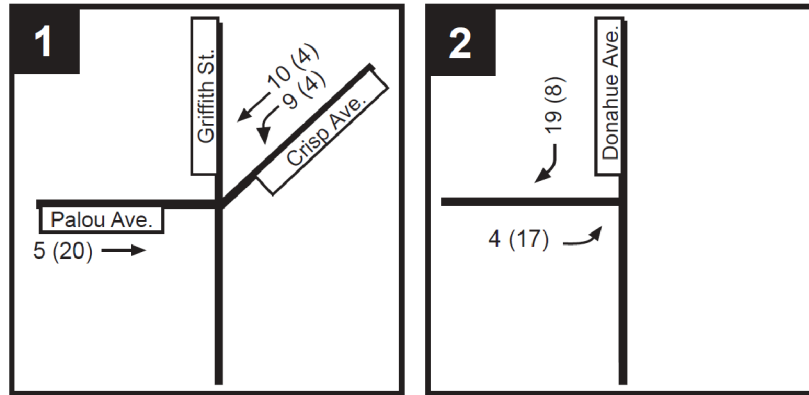
Notes:

1. Delay measured in seconds per vehicle.

2. Level of Service

Source: Fehr & Peers, 2011.

Inset 10.
 Variant 2A Project Trip Assignment



Inset 11.
 Existing Plus Variant 2A

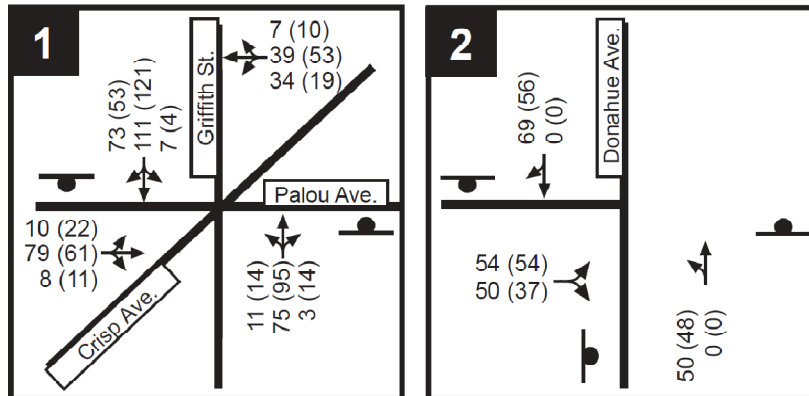


TABLE 4: INTERSECTION LEVEL OF SERVICE – PROJECT CONDITIONS (VARIANT 2A)

Intersection	Control	Peak Hour	Existing		Existing Plus Variant 2A		Project Impact
			Delay ¹	LOS ²	Delay ¹	LOS ²	(Yes/No)
1. Griffith / Palou – Crisp	Signal	AM	11.4	B	11.9	B	No
		PM	11.6	B	12.0	B	No
2. Donahue / Innes	All-Way Stop	AM	7.3	A	7.3	A	No
		PM	7.2	A	7.3	A	No

Notes:

1. Delay measured in seconds per vehicle.

2. Level of Service

Source: Fehr & Peers, 2011.

The addition of Variant-generated vehicle trips to the study area roadway network would cause delay to increase slightly; however, similar to the Project, the study intersections would continue

CUMULATIVE TRAFFIC IMPACT ANALYSIS

Inset 12.

1

Palou Ave.

Griffith St.

Crisp Ave.

170 (110)
180 (170)
10 (10)

10 (20)
250 (500)
200 (410)

50 (150)
510 (290)
10 (10)

20 (20)
90 (160)
290 (240)

2

Donahue Ave.

Innes Ave.

510 (808)
10 (10)
10 (10)

10 (10)
140 (80)
10 (10)

650 (530)
40 (150)
10 (10)

10 (10)
10 (10)
10 (10)

1

Griffith St.

Palou Ave.

170 (110)
180 (170)
10 (10)

10 (20)
249 (499)
200 (410)
Crisp Ave.

50 (150)
509 (289)
10 (10)

20 (20)
90 (160)
290 (240)

2

Donahue Ave.

Innes Ave.

80 (70)
20 (20)

10 (20)
649 (869)

40 (130)
679 (669)

TABLE 5: INTERSECTION LEVEL OF SERVICE – CUMULATIVE CONDITIONS (PROJECT)

Intersection	Control	Peak Hour	Cumulative No Project		Cumulative Plus Project		Project Impact
			Delay ¹	LOS ²	Delay ¹	LOS ²	(Yes/No)
1. Griffith / Palou – Crisp	Signal	AM	43.5	D	43.5	D	No
		PM	54.1	D	54.2	D	No
2. Donahue / Innes	Signal	AM	28.9	C	28.9	C	No
		PM	26.7	C	28.2	C	No

Notes:

1. Delay measured in seconds per vehicle.

2. Level of Service

Source: Fehr & Peers, 2011.

The addition of Project-generated vehicle trips to the study area roadway network and other cumulative traffic growth would cause delay to increase slightly; however, the study intersections would continue to operate at LOS D or better during the PM peak hour. Therefore, the Project would have a **less-than-significant** impact to the study intersections. This is the result of Project design features, transportation demand management, and new and extended transit that will accommodate existing and future traffic.

The project variants were also analyzed under Cumulative Plus Variant 2A and Cumulative Plus Variant 1 conditions. **Insets 14** through **17** summarize the project trip assignment for each variant and existing plus variant conditions. **Table 6** and **Table 7** presents a comparison of the intersection LOS analysis for Cumulative Plus Variant 2A and Cumulative Plus Variant 1 Conditions for the weekday AM and PM peak hours.

TABLE 6: INTERSECTION LEVEL OF SERVICE – CUMULATIVE CONDITIONS (VARIANT 1)

Intersection	Control	Peak Hour	Cumulative No Project		Cumulative Plus Project		Project Impact
			Delay ¹	LOS ²	Delay ¹	LOS ²	(Yes/No)
1. Griffith / Palou – Crisp	Signal	AM	> 80	F	> 80	F	No
		PM	> 80	F	> 80	F	No
2. Donahue / Innes	Signal	AM	30.6	C	30.9	C	No
		PM	28.0	C	28.2	C	No

Notes:

1. Delay measured in seconds per vehicle.

2. Level of Service

Source: Fehr & Peers, 2011.

TABLE 7: INTERSECTION LEVEL OF SERVICE – CUMULATIVE CONDITIONS (VARIANT 2A)

Intersection	Control	Peak Hour	Cumulative No Project		Cumulative Plus Project		Project Impact (Yes/No)
			Delay ¹	LOS ²	Delay ¹	LOS ²	
1. Griffith / Palou – Crisp	Signal	AM	41.3	D	41.8	D	No
		PM	53.8	D	54.5	D	No
2. Donahue / Innes	Signal	AM	29.3	C	29.4	C	No
		PM	27.3	C	27.5	C	No

Notes:

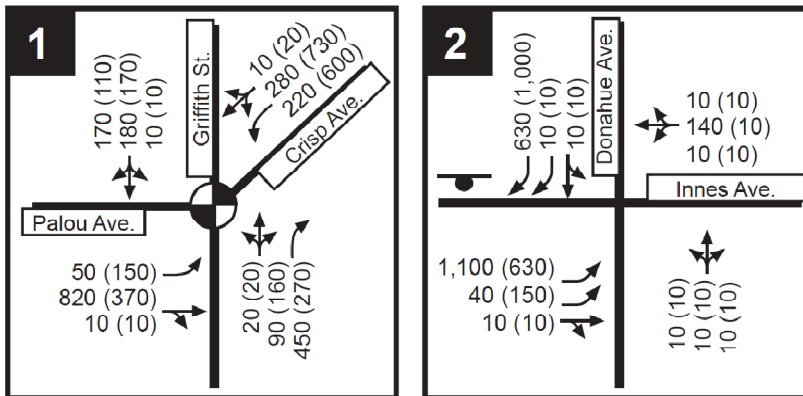
1. Delay measured in seconds per vehicle.

2. Level of Service

Source: Fehr & Peers, 2011.

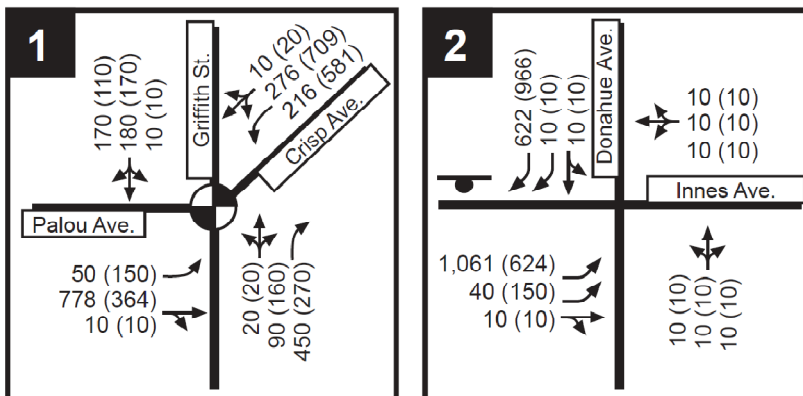
Inset 14.

Cumulative Plus Variant 1



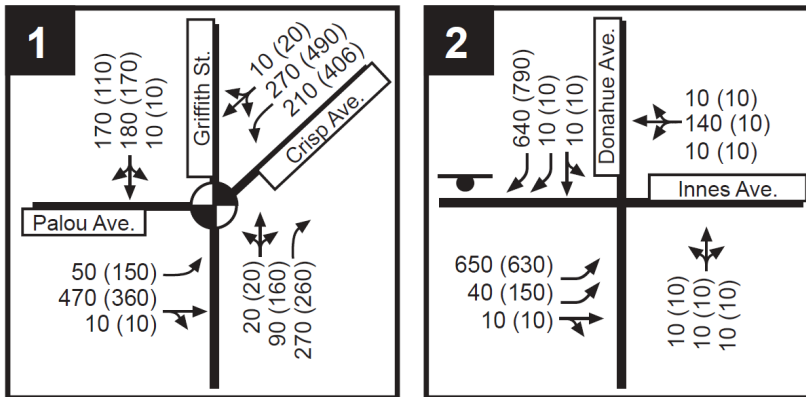
Inset 15.

Cumulative No Project (Variant 1)



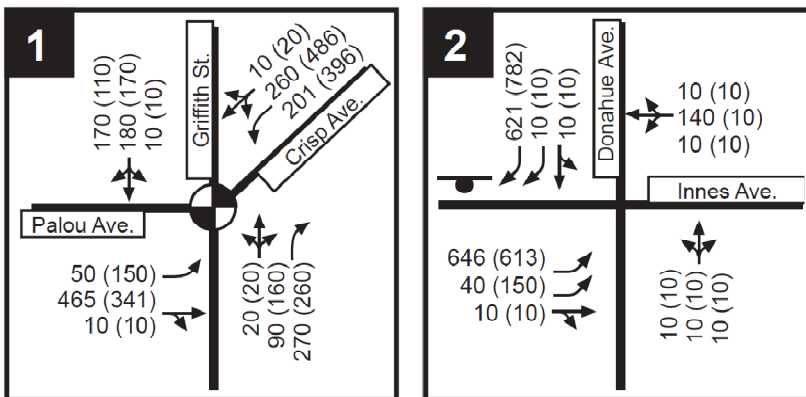
Inset 16.

Cumulative Plus Variant 2A



Inset 17.

Cumulative No Project (Variant 2A)



The addition of Variant 1-generated vehicle trips to the study area roadway network would cause the intersection of Griffith/Palou-Crisp to operate at LOS F during both peak hours. Although the intersection would operate unacceptably, Variant 1 would not add significantly to movements operating at unacceptable levels of service. Thus, Variant 1 would have a **less-than-significant** impact to the intersection of Griffith/Palou-Crisp.

The addition of Variant 2A-generated vehicle trips to the study area roadway network would cause delay to increase slightly; however, the study intersections would continue to operate at LOS D or better. Therefore, Variant 2A would have a **less-than-significant** impact to the study intersections.

SITE ACCESS REVIEW

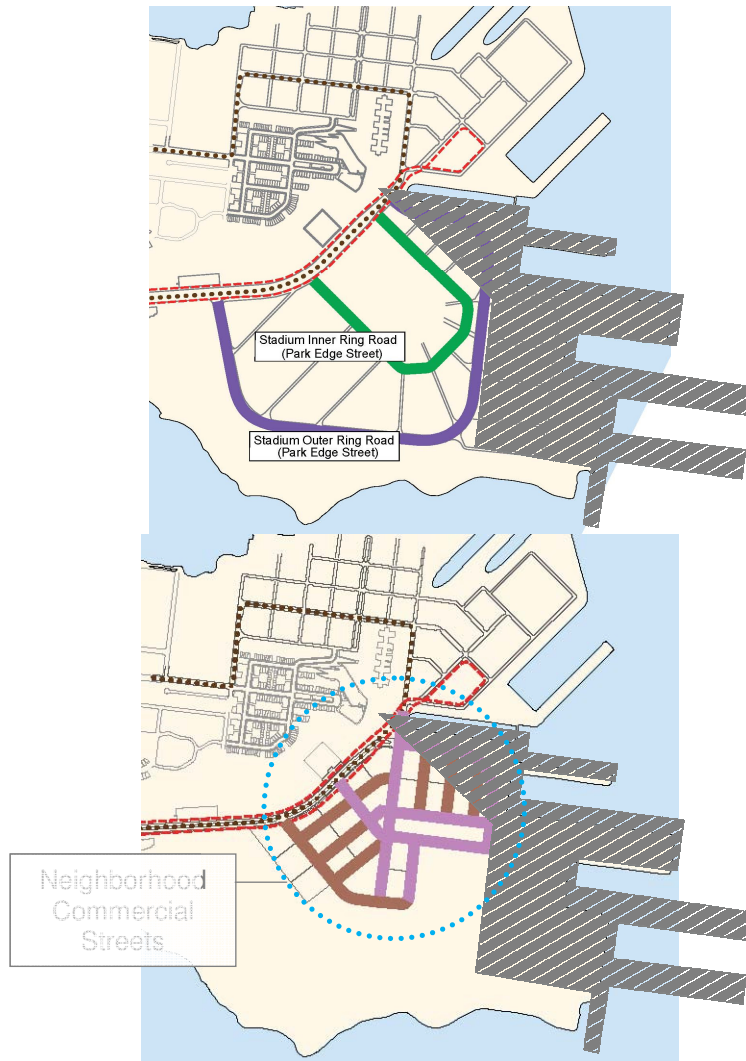
Development of the land to be removed from the Port Priority use area may affect local circulation where the proposed residential or R&D and access points to park areas coincide. The area is also adjacent to the proposed stadium and a portion of the lands would be used for parking on game days. This section summarizes emergency vehicle access, parking, and bicycle and pedestrian circulation in the study area. This qualitative assessment is based on the street classifications and cross sections that were developed for the CP-HPS Project.

Vehicular Access

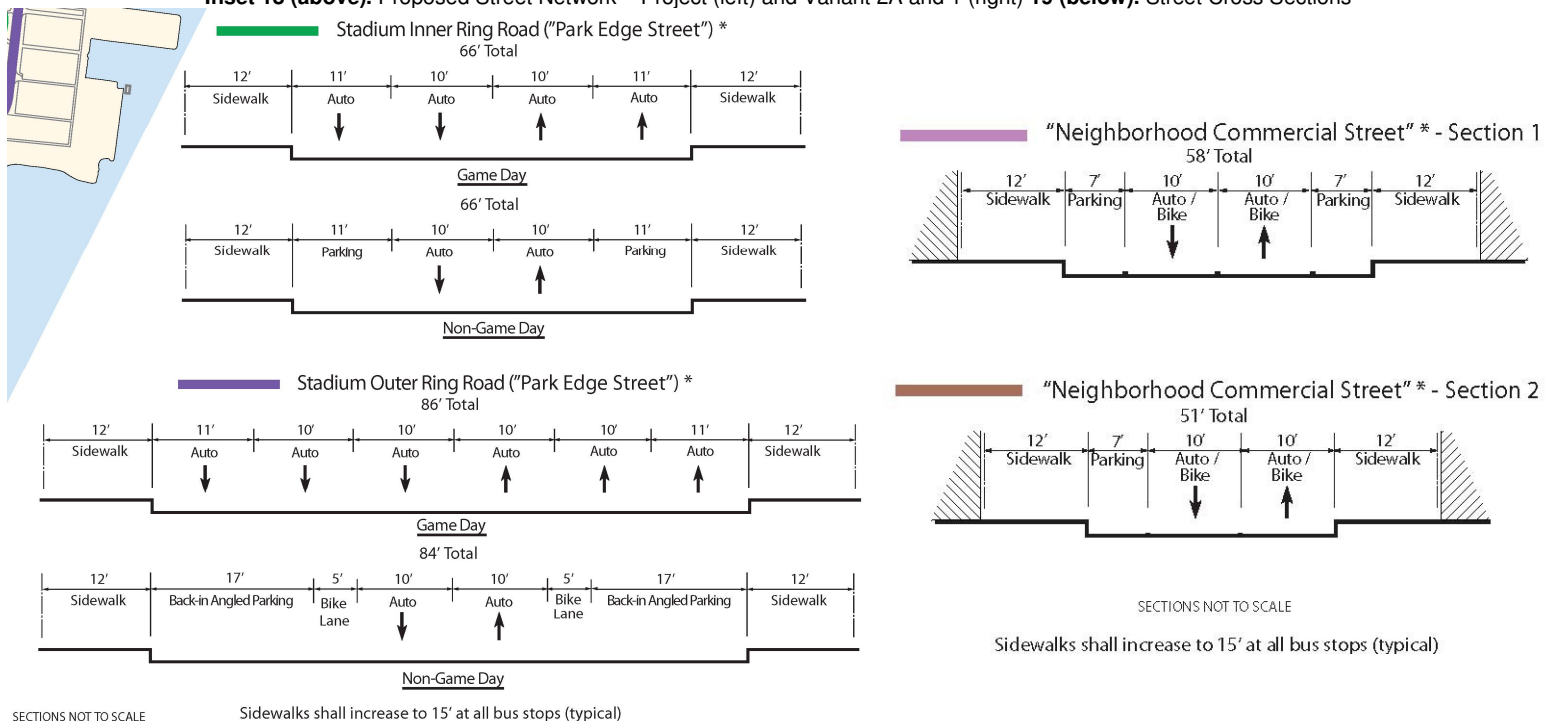
The roadways located immediately adjacent to and within the lands subject to the proposed amendment are would be classified as "Park Edge Streets" under the *San Francisco Better Streets Plan* (2010). **Inset 18** shows the proposed street classifications in the area near the Project. These streets would generally provide access to the stadium and surrounding open space. During game days, the stadium inner ring road would have two travel lanes in each direction. During non-game days, the stadium inner ring road would have one travel lane in each direction and on-street parking on both sides of the road. The stadium outer ring road would have three lanes in each direction on game days. On non-game days, the stadium outer ring road would have one travel lane in each direction, Class II bicycle lanes in both directions, and back-in angled parking on both sides of the street. Sidewalks would be 12 feet wide on both sides of the road.

If the Project is not implemented, vehicle circulation adjacent to the stadium would be affected. Access to on-site stadium parking would be reduced to three locations (from four), which would have the effect of increasing the time it would take to enter and exit the stadium parking area. Thus, implementing the Project would have a beneficial impact on site access.

If either Variant 1 or Variant 2A is constructed, the street network in the area would be reconfigured and be classified as "Neighborhood Commercial Streets." These streets would have one travel lane in each direction and on-street parking on at least one side of the street. The proposed cross sections of streets immediately adjacent to the Project are shown in **Inset 19**.



Inset 18 (above). Proposed Street Network – Project (left) and Variant 2A and 1 (right) **19 (below).** Street Cross Sections



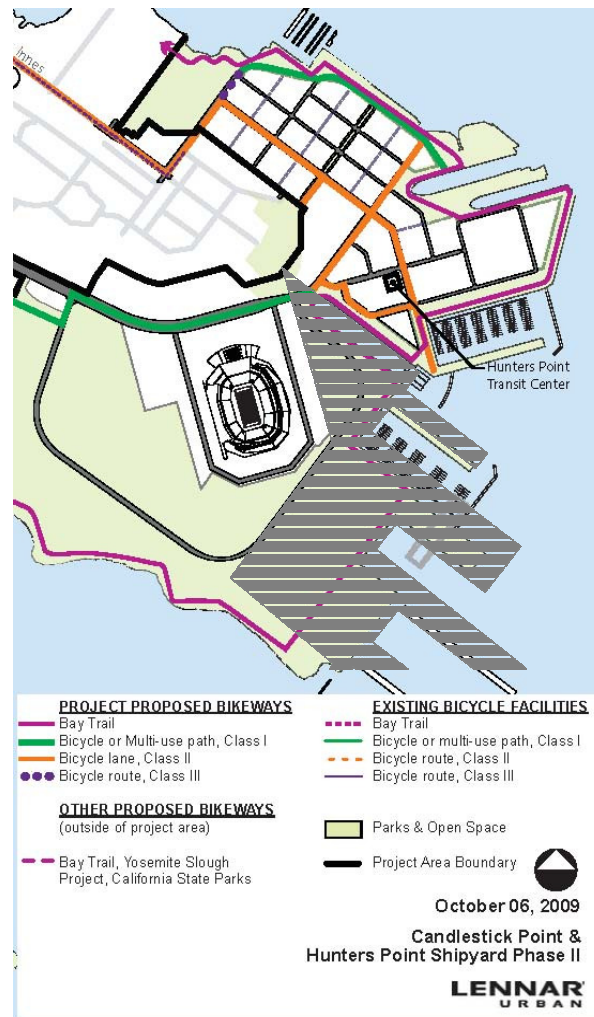
Bicycle and Pedestrian Access

The designation of the Port Priority for open space use provides for significant waterfront recreational activities and facilitates public access to the shoreline and the extension of the Bay Trail. If a stadium is constructed as part of the CP-HPS Project, a portion of the open space on the project site would be used for parking on game days.

The lands subject to the proposed amendment would be served by a robust bicycle and pedestrian network, fully integrated with the existing network in the area. The proposed cross sections are designed to promote non-motorized travel within the CP-HPS Project and would provide adequate facilities to accommodate such travel modes, including Class III bike routes and 12 foot sidewalks adjacent to the land to be removed from the Port Priority use area.

The lands subject to the proposed amendment would also have a portion of the Bay Trail, a Class I shared use path, running through the site. Thus, bicycle and pedestrian access to the lands affected by the Project is designed to be sufficient to meet expected demand, and would not be adversely affected by implementation of the Project. The proposed bike network for the area near the Project is shown in **Inset 20**.

Inset 20: Proposed Bicycle Network Near the Project



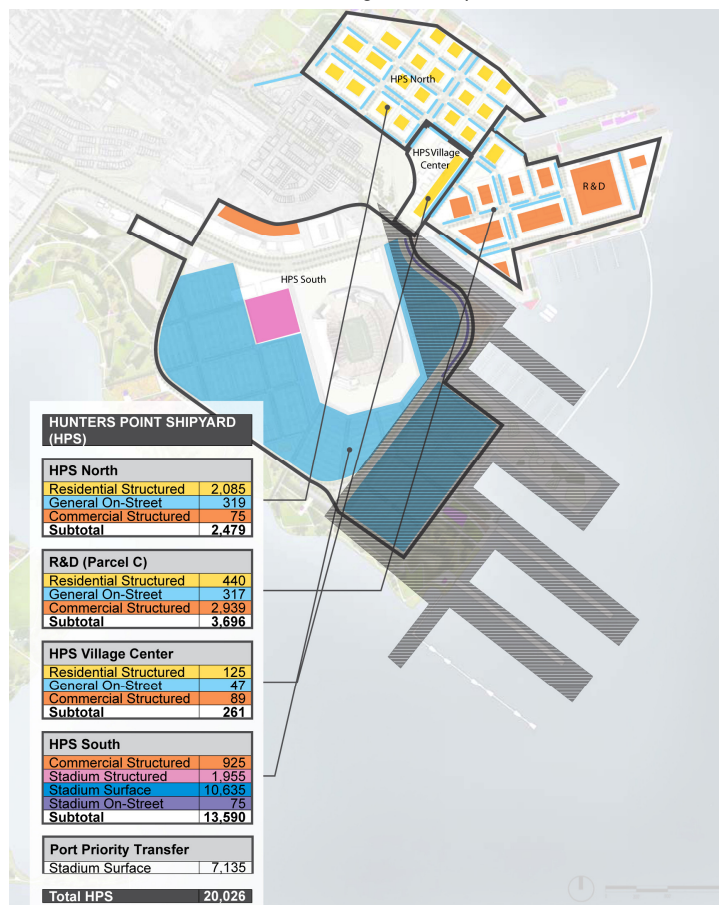
Parking

If the Project were implemented, the lands removed from the Port Priority use area would generate 87 new daily, 4 new AM peak hour, and 4 PM peak hour vehicle trips. Development of Variant 2A would generate 637 new daily vehicle trips, 47 new AM peak hour trips, and 53 new PM peak hour trips. Development of Variant 1 would generate 749 new daily vehicle trips, 97 new AM peak hour trips, and 86 new PM peak hour trips.

The CP/HPS Study did identify a substantial shortfall in area wide parking during certain periods on typical weekdays. Park users and residents are not expected to experience substantial conflicts associated with searching for a parking space on adjacent streets during typical weekdays. Under both Project Variants, on-street parking will be constructed as part of the neighborhood commercial streets proposed for the amendment areas. These parking spaces, in conjunction with adjacent on and off-street parking areas are forecast to support the parking needs of the housing and R&D land uses associated with Variant 2A and Variant 1, respectively.

If a stadium is constructed in Hunters Point Shipyard as part of the CP-HPS Plan, the Project lands would be used for parking on game days. As shown in **Inset 21**, the lands would contain approximately 3,500 parking spaces for use on game days, or about one-third of the proposed parking supply adjacent to the stadium. During non-game days, the lands would be used as sports fields and multi-use fields for waterfront recreation. If the lands are not converted to dual-use sports fields, the parking shortfall near the stadium would likely cause parking spillover to the adjacent neighborhoods in Hunters Point North, Hunters Point Village Center, and in proposed R&D areas (Parcel C) to the northeast of the stadium. Some parking demand would also likely be absorbed in existing residential areas to the northeast of the proposed CP-HPS Plan. Thus, implementing the Project would have a beneficial impact on parking availability.

Inset 21. Parking Near Proposed Stadium



Emergency Access

Under the Project and both variants, emergency access to the lands subject to the proposed amendment would be primarily on the adjacent streets, as well as along the primary auto routes within the CP-HPS Project area, including Crisp Avenue and Innes Avenue. The roadways in the area shown in **Insets 18** and **19** are designed to support emergency access to the area using recommendations in the *San Francisco Better Streets Plan*. For example, the streets are proposed to provide at least 10 foot travel lanes, which would allow emergency vehicles to enter the area without any conflicts with private vehicles. Furthermore, traffic volumes on local streets are expected to be low, especially during non-game days, allowing room for emergency vehicles to maneuver around traffic. During game days, traffic through the area would be more substantial; however, private vehicles are required to yield to on-coming emergency vehicles with flashing sirens. Therefore, the lands subject to the Project are expected to have sufficient emergency access.

CONCLUSION

If the Project were implemented, the lands removed from the Port Priority use area would generate 87 new daily, 4 new AM peak hour, and 4 PM peak hour vehicle trips. Development of Variant 2A would generate 637 new daily vehicle trips, 47 new AM peak hour trips, and 53 new PM peak hour trips. Development of Variant 1 would generate 749 new daily vehicle trips, 97 new AM peak hour trips, and 86 new PM peak hour trips. The study intersections located near these lands would operate at acceptable levels of service during both peak hours, except under Cumulative Plus Variant 1 Conditions; however, neither the Project nor either Variant would be responsible for any significant traffic impacts. Variant 1 would not make a cumulatively considerable contribution to the significant traffic impact at intersection of Griffith / Palou-Crisp.

The area adjacent to the lands proposed for transfer would be fully integrated into the existing and proposed bicycle and pedestrian network envisioned by the CP-HPS Project. Although some visitors will drive, many would arrive without a car. Residents and visitors would share available on-street parking on the surrounding streets, although parking may be constrained during certain periods of the day and on game days if a stadium is constructed.

If the Project were not implemented, both the vehicle circulation and amount of parking spaces for the proposed stadium would be affected.

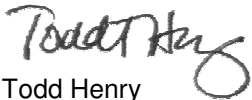
We hope you find this information useful. Please do not hesitate to call for clarifications or additional information.

Sincerely,

FEHR & PEERS



Eric Womeldorff
Senior Transportation Engineer



Todd Henry
Transportation Planner

SF08-0407.04